

Remarks

This Amendment has revised the application to update filing particulars of related applications whose disclosures have been incorporated by reference.

Also, Applicant respectfully traverses the rejection of claims 1-12 under 35 U.S.C. § 103(a) as being unpatentable over United States Patent 5,735,922 Woodward et al. in view of French Patent 2221409 Nedelec for reasons more specifically discussed below.

The present invention involves a system and method for forming and quenching glass sheets utilizing a furnace having an exit end that includes a roll bending station with progressively inclined bending rolls within its heated chamber, a press bending station located externally of the furnace downstream from its exit end to form the glass sheet with curvatures both along and traverse to the direction of conveyance, and a quench station for rapidly cooling the formed glass sheet to provide toughening. The prior art including the Woodward et al. and French Nedelec patents do not teach or in any way suggest such glass sheet forming and quenching.

As discussed in the specification on page 10 at lines 5-11, the manner in which the initial roll bending of the glass sheets is performed by the progressively inclined bending rolls prior to exiting the furnace provides a relatively rapid transfer of the heated glass sheet from the furnace heated chamber through the press bending station to the quench station. This allows the glass sheet to still be sufficiently hot for the quenching without requiring excessive heating within the furnace so as to become soft and lose its optical quality during the transfer and bending.

More specifically, in the Woodward et al. patent, the inclined bending rollers 41 shown in Figures 4 and 5 are specifically disclosed as being located downstream from the exit end of the furnace 12 unlike the present invention where the progressively inclined bending rolls are within the furnace heated chamber. Furthermore, the Woodward et al.

bending rollers 41 are supported and driven in a manner that would not be operable within the heated environment of the furnace. Specifically, the bending rolls 41 are each driven by a “flexible drive shaft 51” (column 9, line 32 and Figure 5) that would not function in the heated environment of a furnace. Furthermore, a pivotal arm 50 that supports each inclined roller 41 is adjustably angularly positioned by a slotted plate 52 and an associated wing nut (column 9, lines 32-35 and Figure 5) which also would not function in the heated environment of the furnace. Likewise, the direction of conveyance of each roller 41 is controlled by a turret 55 and an associated threaded shaft 56 and nut 57 (column 9, lines 35-44 and Figure 5) that likewise would not function within the heated environment of the furnace. Thus, if one were to utilize the Woodward et al. rollers within the furnace as proposed in the Office Action in view of the disclosure of the French Nedelec patent, an inoperative structure would result.


Further in regard to the French Nedelec reference, the rolls disclosed in this reference are not progressively inclined along the direction of conveyance in accordance with the present invention. Rather, the disclosure of Nedelec moves all of the rolls simultaneously from a horizontal position to an inclined position, rather than having rolls that are progressively inclined along the direction of conveyance in accordance with the present invention. Revision of Woodward et al. to incorporate the rolls of Nedelec thus would not render the claimed invention.

Thus, even if one were to modify the Woodward et al. structure in view of Nedelec, the structure and operation of the roll bending would not be in accordance with the present invention as discussed above.

For the reasons set forth above, it is respectfully submitted that claims 1-12 distinguish over the Woodward et al. and Nedelec references as well as over all other prior art of which Applicant is aware and that the application is thus allowable such that it is appropriate to hereby respectfully solicit its allowance.

Respectfully submitted,

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Attachment



VERSION WITH MARKINGS TO SHOW CHANGES MADE

In The Specification:

Page 10, Line 12:

The roll bending station 14, the press bending station 16, and the quench station 18 are respectively disclosed by United States patent applications: [(Docket GLT 1774 PUS)] Serial No. 09/884,394; [(Docket GLT 1775 PUS)] Serial No. 09/884,847; and [(Docket GLT 1776 PUS)] Serial No. 09/884,843 all of which [are all being] were filed concurrently herewith and the entire disclosures of which are hereby incorporated by reference.

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